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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,363	12/12/2003	Karl Schreiber	2560-0418	8696
7590 07/12/2005			EXAMINER	
DAVIDSON BERQUIST KLIMA & JACKSON LLP			KIM, TAE JUN	
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4501 North Fairfax Drive			PAPER NUMBER	
Arlington, VA 22203			3746	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/733,363

Applicant(s)

SCHREIBER, KARL

Examiner

Ted Kim

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>05/18/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 8-10, 12, 13, 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Thompson et al (6,575,694). Thompson et al teach a protective ring for a fan protective casing of a gas turbine engine, comprising a penetration sleeve having an alternation of several, interconnected strata, each comprising a metal band 52, 54, 56, 58 and a polymer-impregnated fiber-weave layer (see col. 5, lines 8+; col. 6, lines 19+; col. 7, lines 60+); wherein the polymer-impregnated fiber-weave layers comprise at least one of glass fibers, polyethylene fibers, polyamide fibers, aramide fibers and carbon fibers impregnated with at least one of polyester and highly energy-absorbing resins, i.e. KEVLAR, and the metal bands are constructed of at least one of aluminum, titanium and nickel base alloy (col. 10, lines 3-6); wherein both an inner 52 and outer circumferential surface are each formed by a metal band 56; wherein multi-ply strips of metal bands and polymer-bonded fiber-weave layers are wound spirally to obtain a protective ring of

sufficient wall thickness; having sufficiently large wall thickness to act as a full containment; comprising a trapping layer of fiber material 64 positioned outside the penetration sleeve for arresting breakthrough of fan blade fragments; wherein the fiber layers are wound and comprising two outer flanges being conformally integrated by the wound fiber layers; wherein both an inner and outer circumferential surface are each formed by a metal band; wherein two ends of the respective metal bands overlap (at the upstream and downstream ends) and the fiber-weave layers extend between frontally opposite ends of adjacent metal bands; comprising at least two penetration sleeves with matching diameters assembled into one another to obtain a specific large wall thickness; wherein two ends of the respective metal bands overlap and the fiber-weave layers extend between frontally opposite ends of adjacent metal bands; comprising at least two penetration sleeves with matching diameters assembled into one another to obtain a specific large wall thickness.

3. Claims 1-7, 9, 12-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Crouch (5,272,954). Crouch teaches a protective ring for a fan protective casing of a gas turbine engine (col. 1, lines 9+), comprising a penetration sleeve having an alternation of several, interconnected strata, each comprising a metal band 2 or 1 and a polymer-impregnated fiber-weave layer 4; wherein the polymer-impregnated fiber-weave layers comprise at least one of glass fibers, polyethylene fibers, polyamide fibers, aramide fibers and carbon fibers impregnated with at least one of polyester and highly energy-absorbing resins, i.e. KEVLAR, and the metal bands are constructed of at least one of aluminum

alloy; wherein both an inner and outer circumferential surface are each formed by a metal band 1, 2; wherein multi-stratum strips of metal bands and fiber-weave layers are joined at the ends by an adhesive t3 (col. 4, lines 18+) to form the protective ring; wherein two ends of the respective metal bands overlap (axially) and the fiber-weave layers extend between frontally opposite (axial) ends of adjacent metal bands; comprising at least two penetration sleeves with matching diameters assembled into one another to obtain a specific large wall thickness. Crouch teaches that there are more than 2 layers for sheets 2 contemplated (col. 7, lines 1+). Crouch teaches a full containment device (as no fragments are allowed to completely penetrate).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crouch (5,272,954) in view of any of Wojtyczka et al (6,652,222), Thompson et al (6,575,694) and Porcelli (4,377,370). Crouch teaches various aspects of the claimed invention and teach that there are more than 2 layers for sheets 2 contemplated (col. 7, lines 1+). It would have been obvious to one of ordinary skill in the art to employ several layers, as within the range of more than 2. Crouch do not show the containment casing with a further trapping

layer. Thompson et al teach a further trapping layer 64. Wojtyczka et al teach a further trapping layer 23. It would have been obvious to one of ordinary skill in the art to employ a further trapping layer, in order to prevent the fragments from leaving the fan casing. As for making an intermediate sheet of metal weave, metal weaves are old and well known in this art and it would have been obvious to employ as a matter of employ the conventional materials used in the art. Furthermore, the use of a spiral winding is not specifically taught. However, Porcelli teaches it is old and well known in the art to employ a spiral winding 15 as a conventional way of employ the fiber weave. It is believed that Crouch teaches a full containment device (as no fragments are allowed to completely penetrate). Alternately, it would have been obvious to make a full containment device, in order to prevent the fragments from penetrating.

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al (6,575,694) in view of either Porcelli (4,377,370) or Crouch (5,272,954). Thompson et al teach various aspects of the claimed device. As for making an intermediate sheet of metal weave, metal weaves are old and well known in this art and it would have been obvious to employ as a matter of employ the conventional materials used in the art. Furthermore, the use of a spiral winding is not specifically taught. However, Porcelli teaches it is old and well known in the art to employ a spiral winding 15 as a conventional way of employ the fiber weave. It is believed that Thompson et al teaches a full containment device (as no fragments are allowed to completely penetrate). Alternately, it would have been obvious to make a full containment device, in order to

prevent the fragments from penetrating. Thompson et al teach the upstream and downstream layers are fixed to the flanges 40 and allow equivalent mechanical fasteners. Crouch teaches the use of adhesive t3 with the fibers. It would have been obvious to one of ordinary skill in the art to employ the adhesive through the fibers, including the upstream ends, to facilitate an equivalent mechanical connection.

7. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joubert et al (4,411,589) in view of either Crouch or Thompson et al. Joubert et al teach protective ring for a fan protective casing of a gas turbine engine, comprising a penetration sleeve having an alternation of several, interconnected strata, each comprising a rigid band 9 and a polymer-impregnated fiber-weave layer 8; wherein the polymer-impregnated fiber-weave layers comprise at least one of glass fibers, polyethylene fibers, polyamide fibers, aramide fibers and carbon fibers impregnated with at least one of polyester and highly energy-absorbing resins, i.e. KEVLAR. Joubert et al do not teach the bands 9 are metal. Crouch teaches a fan containment casing where the use of sheet metal bands 2 is contemplated. Thompson et al teach sheet metal bands 52, 54, 56, 58, 56 interposed between fiber layers of KEVLAR. It would have been obvious to one of ordinary skill in the art to employ metal bands, as taught by either Crouch or Thompson et al, in order to employ an equivalent strong and rigid material. Crouch teaches the use of adhesive t3 with the fibers. It would have been obvious to one of ordinary skill in the art to employ the adhesive through the fibers, including the upstream ends, to facilitate an equivalent mechanical connection. Joubert et al do not show the containment casing with a further trapping layer.

Thompson et al teach a further trapping layer 64. It would have been obvious to one of ordinary skill in the art to employ a further trapping layer to prevent escape of the blade fragments.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 571-273-8300 for Regular faxes and 571-273-8300 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at <http://www.uspto.gov/main/patents.htm>



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